

SPLIT

Work Order ID 56315 - 1

Page 1

February 17, 2010 2:36:03 PM

Item ID: D3774-1

Accept



Setup Start



Revision ID:

Stop



Item Name: Seat Bottom, LH/RH

(1)

Start Date: 2/17/10 Start Qty: 4.00



Cust Item ID:

Required Date: 2/24/10 Req'd Qty: 4.00



Customer:

Reference:

Approvals: Process Plan:

RL

Date: 10-27

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3774	Rev B

100 0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

30
10/02/23

Thermoforming Machine

Set up machine program D3774-1 □ Set up clamping frame as per folio

110



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

30
10/02/23

Thermoforming Machine

Cut Blanks

DRYSHEET IN 10/02/23 4:30 25SF

OUT

25SF
6:30AM

120



THERMOFORMING MACHINE

Thermoform

Memo

0.00

30
10/02/24
X6

Thermoforming Machine

Thermoform as per Dwg. D3774-1 and Folio Dwg. Rev. Folio Rev. C

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56315

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Customer:

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Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Quality Control

BB
10/02/24
X1

140

HAND FINISHING THERMOFORMING

0.00



Thermoform

Thermoforming Machine

Memo

0.00

Trim to Finished Dimensions

BB
10/02/24
X1

150

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Quality Control

Memo

0.00

1) Check dimensions to ensure conformity to drawing tolerances.

BB
10/02/24
X1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

Work Order ID 56315

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Item Name: Seat Bottom, LH/RH

Stop



Start Date: 2/17/10 Start Qty: 4.00



Cust Item ID:

Required Date: 2/24/10 Req'd Qty: 4.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC5- Inspect part completeness to step on W/O

0.00

S.02/24

66



QC

Quality Control

Memo

B56315 4

170

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

Packaging

Luis/Say ②

180

QC21- Final Inspection - Work Order Release

0.00



QC

Quality Control

Memo

0.00

10/02/24 44

MF
10-2-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 1

February 17, 2010 2:36:07 PM

Work Order ID: 56315



Parent Item: D3774-1



Parent Item Name: Seat Bottom, LH/RH

Start Date: 2/17/10

Required Date: 2/24/10

Comments: IPP REV:A New Issue 08.06.04 DL verified by:DD

Start Qty: 4.00

Required Qty: 4.00

IPP REV. B Dwg. Update 08.08.19 DL

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MLEXS.125-F60029-04		Purchased	No			110	sf	586.0519	42.6680			

GE PLASTICS LEXAN SHEET

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
MAT	586.051898	
103106	1.6765	
105330	37.8767	
109455	40.5717	
111710	265.893632	
112585	240.033366	

BB
10/02/23
X6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	56315
Description: Seat Bottom	Part Number:	D3774-1
Inspection Dwg: D3774 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

First Article Prototype

THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by: BB

Date: 10/02/24

TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.3	+/-0.100	1.32	✓			
33.9	+/-0.100	33.875	✓			
17.4	+/-0.100	17.5	✓			
0.085	Min	.114	✓			
0.100	Min	.111	✓			
0.100	Min	.118	✓			
0.100	Min	.108	✓			
0.100	Min	.105	✓			

Measured by: BB

Date: 10/02/24

Audited by: BL

Date: 10/02/24

Prototype Approval:

Date:

Rev	Date	Change	Revised by	Approved
A	08.09.04	New Issue	KJ/DL	BB

8 7 6 5 4 3 2 1

D

D

C

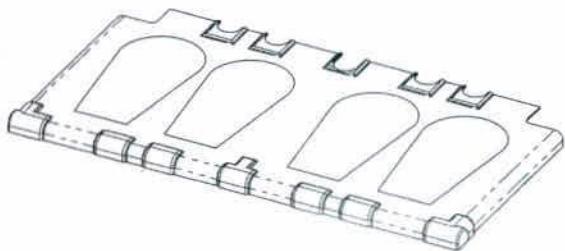
C

B

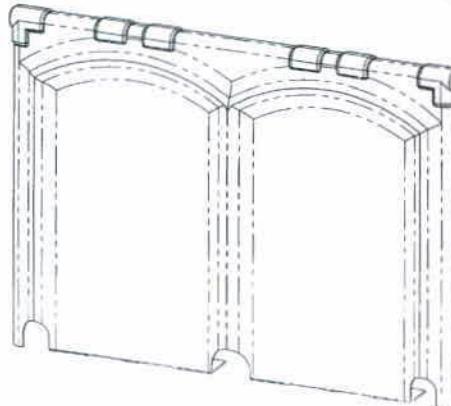
B

A

A



D3774-1 SEAT BOTTOM



D3774-3 SEAT BACK

RELEASED
08-08-11/11

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 56315
BY 10-217

B	UPDATE CUTOUT DIMENSIONS (ZN D4-2, D6-2, C4-3, C7-3); UPDATE MINIMUM THICKNESS (ZN A5-2, A5-3); ADD HOLES ON D3774-3 (ZN B6-3). REASON: MANUFACTURING CAPABILITIES			PH	08.07.25
A	NEW ISSUE			HS	08.06.23
REV.	DESCRIPTION			BY	DATE
DESIGN	HS				
DRAWN	P&H				
CHECKED					
MFG. APPR.					REV. B
APPROVED					SHEET 1 OF 3
DE APPR.					TITLE
					SEAT
DATE	08.07.25				SCALE
					NTS

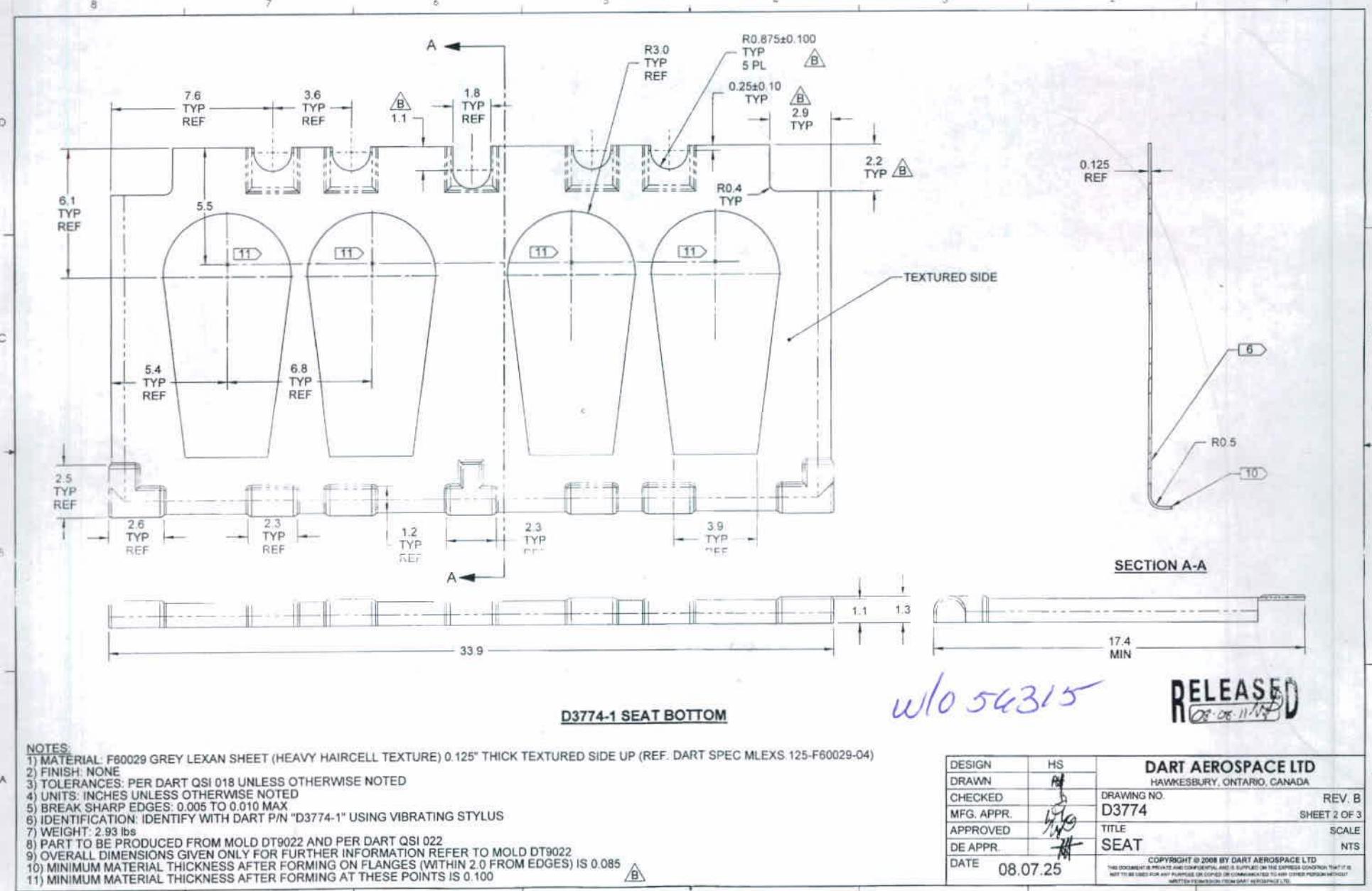
DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

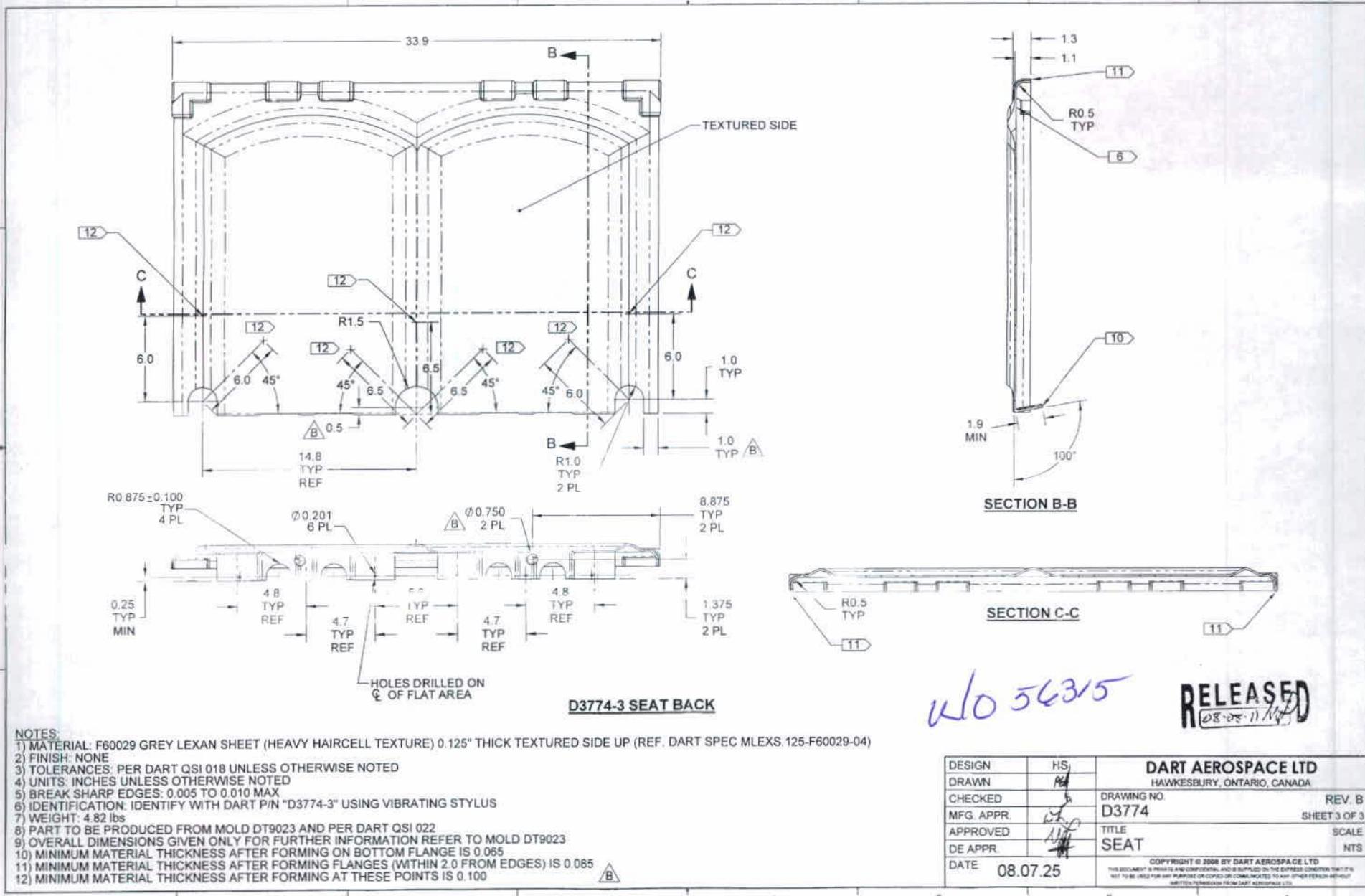
DRAWING NO. D3774
TITLE SEAT

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8 7 6 5 4 3 2 1

D3774-21





DESIGN	HS	DART AEROSPACE LTD
DRAWN	RE	HAWKESBURY, ONTARIO, CANADA
CHECKED	5	DRAWING NO.
MFG. APPR.	WT	D3774
APPROVED	WT	REV. B
DE APPR.	WT	SHEET 3 OF 3
DATE 08.07.25		TITLE SEAT
NTS		

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Daryl Leger

From: Jason Murdoch [jmurdoch@dartaero.com]
Sent: Tuesday, February 23, 2010 3:33 PM
To: 'Chris Provencal'; 'Daryl Leger'
Cc: 'Linda Lacelle'
Subject: RE: Manufacturing Polycarbonate

Daryl,
 Must record.

Jason Murdoch
Quality Coordinator
 jmurdoch@dartaero.com
DART Aerospace Ltd.
 613-632-5200

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: February 23, 2010 3:31 PM
To: 'Daryl Leger'
Cc: 'Jason Murdoch'; 'Linda Lacelle'
Subject: RE: Manufacturing Polycarbonate

I'm OK with making the seat bottoms, the existing folio should be followed.

Should record:

Drying

- The time when sheets were placed in the oven
- Temperature
- Time when removed

Forming

- Time when sheet formed
- Mold Temp
- Sheet Temp just before molding
- Release Temp

Plus whatever dimensions and additional checks that are normally measured.

- Chris

From: Daryl Leger [mailto:dleger@dartaero.com]
Sent: February 23, 2010 2:16 PM
To: cprovencal@dartaero.com
Cc: Jason Murdoch; Linda Lacelle
Subject: Manufacturing Polycarbonate
Importance: High

Chris:

Linda is in dire need for at least 1 D3774-1 aft facing seat bottom. We have an order for 4 so I would like to make a total of 5.

Because we have had discussion on parameters for manufacturing and have a sense of where we want to be with this, I would like to produce these for her tomorrow morning using the outlined parameters listed below.

We will dry the 0.125" lexan sheet at the recommended temperature of 255 deg. F., overnight for 15hrs. (The recommended time
 2/24/2010

TOOK 1 HR 45 TO GET IDEAL PART

V. TIGHT	- 60	#HOLD	258.
TIGHT	- 75	#HOLD	270
Just OK	- 75	-	273
NO GRAB.	- 67	-	280
Too Hot.	- 67	-	282

Sheets @ 73F @ start.

	1	2	3	4	5	6
8:00	8:30	8:29	8:46	8:58	9:11	
230F	234	229	227	239	238	
340	340	340	340	340	340	
258	270	273	280	289	279	

is about 10 hrs. for 4 mm sheet, but there is no sense in having someone come in early just to remove the sheet.)
We will form them on a mould preheated to approx 240deg.F., then cool without fans to a surface temperature of approx. 270 deg. F. at which time they will be parted from the mould.
All other existing info on the folio and IPP will not change.

We will document the added steps and requirements on the WO.

Are you OK with this.

RSVP

Daryl L. Leger

Production Engineering Co-ordinator

DART

aerospace

TEL: 613-632-5200

FAX: 613-632-1426

EMAIL: dleger@dartaero.com